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| 09/821,340 | 03/29/2001 | G. Diwakar Vishakhadatta | SILA:073 | 5347 |

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| EXAMINER |
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TSE, YOUNG TOI

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| ART UNIT | PAPER NUMBER |
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2637

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/821,340

Applicant(s)

VISHAKHADATTA ET AL.

Examin r

YOUNG T. TSE

Art Unit

2637

-- The MAILING DATE of this c mmunication appears on th c ver sheet with the correspondence address --
Period f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2001.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-19, 24-30, 34-52 and 57-63 is/are rejected.
7) ☒ Claim(s) 20-23, 31-33, 53-56 and 64-66 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 29 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 092001.111502.112502, 12 0302, 082903
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed November 15, 2002 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

The copies of the Foreign Patent Documents C21-C90 have not been received by the Patent Office.

Drawings

2. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings submitted on August 16, 2001 are informal drawings. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: on page 1, Applicants are requested to update the provisional application No. 60/273,119 and the

U.S. application No. 09/182,342, now U.S. Patent No. 6,804,497 B2; on page 6, line 18, "to invention" should be "to the invention"; on page 7 and page 8, the brief description of Figures 9B, 11B, 12 and 13 are missing (it may occur during scanning of the application). Appropriate correction is required.

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

5. Claims 7, 10, 22, 24, 34, 43, 47, 55, 56, 57 are objected to because of the following informalities: in claim 7, line 2, "signals" should be "signal"; in claim 10, line 1, "clock interface" should be "clock signal interface" (also see claims 24, 43, and 57); in claim 22, line 1, "receiver digital circuitry" should be "the receiver digital circuitry"; in claim 34, lines 3 and 7, "receiver analog circuitry" and "receiver digital circuitry" should be "the receiver analog circuitry" and "the receiver digital circuitry", respectively (also see claim 47); in claim 55, lines 3 and 4, "serial data-out" and "cause serial" should be "a serial data-out" and "cause the serial", respectively; and in claim 56, line 1, "transceiver" should be "method". Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-4, 10, 14-19, 24-28, 34-37, 43, 47-52, and 57-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. in view of Gilhousen et al..

Liu et al. (U.S. Patent 6,345,072 B1) discloses a communications system in Figures 2A and 2B comprising a plurality of transmission lines 220 (Rx, clocks, Tx, and Reset) for communication between an analog section 205 and a digital section 230.

With respect to claims 1, 14, 34, and 47, the analog section 205 corresponds to the receiver analog circuitry, which comprises a DSL Codec 218 for converting analog data into digital data by an A/D converter 213 to the plurality of transmission lines 220 by control signals (see col. 3, lines 8-12; col. 4, lines 4-12; and col. 5, line 66 to col. 6,

line 4) and the digital section 230 corresponds to the receiver digital circuitry, which comprises a DSL modem digital circuitry 237 coupled to the receiver analog circuitry 205 for processing the digital data of the plurality of the transmission lines 220.

In addition to claims 14 and 47, clearly, each of the analog section 205 and the digital section 230 is integrated in a single chip or IC (see col. 5, lines 32-38).

Although Liu does not explicitly show or suggest that the analog data are analog radio-frequency (RF) data, Liu teaches that a plurality of receive signal lines and a bit clock signal line for carrying a clock signal are from a remote site and to those skilled in the art the present invention would be beneficially used in any environment where it is desirable to link separated analog/digital portions of an xDSL modem (see col. 3, lines 47-54 and col. 4, lines 53-58).

Gilhousen et al. (U.S. Patent No. 5,056,109) discloses a related communications system comprising a power control system in Figures 3 and 4 for a cellular mobile telephone system for adjusting transmission power of a mobile unit. In Figure 3, the power control system comprises an analog receiver 54 for receiving an analog RF signal from an antenna 52 and converting the analog RF signal into a digital signal to a digital data receiver 56, a received digital data signal generated by the digital data receiver 56 is converted to a user digital baseband circuitry 58.

Clearly, as taught and shown in Figures 3 and 4 by Gilhousen, it would have been obvious to one of ordinary skill in the art that the circuitry integrated in Liu's analog section 205 is capable of receiving an analog RF signal which may be transmitted from a remote site suggested by Liu or a wireless communication system that is capable of

transmitting an RF signal to the analog receiver 54 as taught by Gilhousen in order to receive a radio frequency signal from a wireless communication system.

With respect to claims 3-4, 15-16, 25-28, 35-36, 48-49, and 58-61, in control information, a start bit is set to a logical 0 (first state) when there is control data, and logical 1 (second state) otherwise (see col. 10, lines 25-30).

With respect to claims 10, 17-19, 24, 37, 43, 50-52, and 57, clearly, the plurality of the transmission lines includes data signals, clock signals, control signals, enable, signal, data-in signal, and data-out signal.

9. Claims 5-9, 11-13, 29-30, 38-42, 44-46, and 62-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. in view of Gilhousen et al. as applied to claims 4, 10, 28, 37, 43, and 61 above, and further in view of Goolcharan et al..

As applied to claims 4, 10, 28, 37, 43, and 61 above, although Liu does not explicitly show or suggest that the data signal, the clock signal, the enable signal, the data-in signal, and the data-out signal of the transmission lines are either a band-limited current signal or a band-limited differential current signal as recited in claims 5-8, 11-12, 29-30, 38-41, 44-45, and 62-63.

Goolcharan et al. (U.S. Patent No. 6,064,422) also discloses a related communications system comprising a receiver circuit 72 in Figure 9 having a compensation circuit U101 for compensating differential signals into a nonlinear amplification across the bandwidth of the differential signals (see col. 12, lines 46-60).

Therefore, it would have been obvious to one of ordinary skill in the art to include a compensation circuit in Liu's receiver analog or digital circuitry as taught by Goolcharan in order to convert a data signal, a clock signal, an enable signal, a data-in signal, or a data-out signal into a band-limited current or a band-limited differential current data, clock, enable, data-in, or data-out signal.

With respect to claims 9, 13, 42, and 46, clearly, the analog and digital sections 205 and 230 are integrated in a single chip or IC (see col. 5, lines 32-38).

Allowable Subject Matter

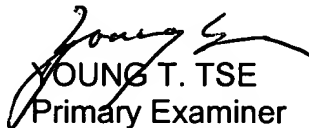
10. Claims 20-23, 31-33, 53-56, and 64-66 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: References Havens et al., Gross et al., Goken, and Kerth et al. are related to communication systems comprising a receiver analog circuitry for receiving an analog RF signal to provide a digital signal to a receiver digital circuitry for communication. However, none of the prior art shows or suggests that the receiver digital circuitry includes a plurality of signal drivers to provide the plurality of data signals and the plurality of the control signals of the serial interface to the receiver analog circuitry when the control signal is in a second state or the receiver analog circuitry includes a multiplexer to provide the data signal to the receiver digital circuitry in response to a data transfer clock.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOUNG T. TSE whose telephone number is (571) 272-3051. The examiner can normally be reached on Monday and Wednesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


YOUNG T. TSE
Primary Examiner
Art Unit 2637